

## ENHANCING COCHLEAR IMPLANTS WITH HEARING AID SIGNAL PROCESSING TECHNOLOGIES

### ABSTRACT OF THE DISCLOSURE

A system and method that enhance the performance of cochlear implant signal processing in an amplification device. The system utilizes a signal input device that picks up the sounds from the environment or from other hearing or audio devices and feeds the incoming signal into a front-end signal processor, which can be signal processors from hearing aids, hearing protectors or other audio devices. The front-end processor pre-processes the signals and feeds them into a cochlear implant signal processor. The front-end processor may have multiple signal feeding and signal extraction points, other than the two ends, to which connections can be made to feed signals into and extract signals from the front-end processor. The system may also insert a front-end processor into multiple signal processing stages of a cochlear implant signal processor with the front-end processor “sandwiched” between the multiple signal processing stages of the cochlear implant signal processors. The system may also insert a front-end processor into multiple signal processing stages of a cochlear implant signal processor with the front-end processor being either an integrated part of the cochlear implant signal processor or a functionally distinctive part for bilateral cochlear implants.